

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Serial No.: Not Yet Received (Filed Contemporaneously with Application)

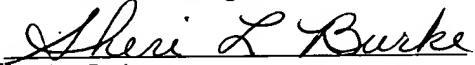
Filing Date: January 5, 2001

Applicant: Richard L. McCreery

Entitled: CHEMICAL MONOLAYER AND MICRO-ELECTRONIC JUNCTIONS AND  
DEVICES CONTAINING SAME

Assistant Commissioner for Patents  
Box Patent Application  
Washington, D.C. 20231



|  |                                  |
|--|----------------------------------|
| CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.10   |                                  |
| "Express Mail" Number: EL622263362US   | Date of Deposit: January 5, 2001 |
| I hereby certify that this correspondence is being deposited with the U.S. Postal Service as U.S. Express Mail in an envelope addressed to BOX PATENT APPLICATION, Assistant Commissioner for Patents, Washington, D.C. 20231. |                                  |
| <br>Sheri L. Burke   |                                  |

Sir:

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR §§ 1.97-1.98**

As authorized and encouraged under 37 CFR §§ 1.97-1.98 and the provisions of MPEP §§ 609 and 707.05 (b), Applicant(s) submits herewith certain patent references, publications and/or other information which the Patent and Trademark Office may wish to consider in examining the above-identified patent application. The references and information are listed below and on attached form PTO-1449.

**U.S. PATENTS**

| U.S. PATENT NUMBER | INVENTOR(S)   |
|--------------------|---------------|
| 6,103,868          | Heath et al.  |
| 6,128,214          | Kuekes et al. |

### FOREIGN PATENT DOCUMENTS

| COUNTRY | PATENT NO. | INVENTOR(S) |
|---------|------------|-------------|
| NONE    |            |             |

### OTHER DOCUMENTS

1. C.A. Mirkin, M.A. Ratner, "*Molecular Electronics*", Annu. Rev. Phys. Chem., 1992, **43**, 719 - 754.
2. M.A. Reed, J.M. Tour, "*Computing with Molecules*", Scientific American, 2000, 86-93
3. L.A. Bumm, J.J. Arnold, M.T. Cygan, T.D. Dunbar, T.P. Burgin, L. Jones, D.L. Allara, J.M. Tour, P.S. Weiss, "*Are single Molecular Wires Conducting?*", Science, 1996, **271**, 1705
4. C. Zhou, M.R. Deshpande, M.A. Reed, L. Jones, J.M. Tour, "*Nanoscale Metal/Self-Assembled Monolayer/Metal Heterostructures*", Appl. Phys. Lett., 1997, **71**(5), 661.
5. M.A. Reed, C. Zhou, C.J. Muller, T.P. Burgin, J.M. Tour, "*Conductance of a Molecular Junction*", Science, 1997, **278**, 252.
6. L.A. Bumm, J.J. Arnold, T.D. Dunbar, D.L. Allara, P.S. Weiss, "*Electron Transfer through Organic Molecules*", J. Phys. Chem. B., 1999, **103**, 8122-8127.
7. C.P. Collier, E.W. Wong, M. Belohradsky, F.M. Raymo, J.F. Stoddart, P.J. Kuekes, R.S. Williams, J.R. Heath, "*Electronically Configurable Molecular-Based Logic Gates*", Science, 1999, **285**, 391 -393
8. C.P. Collier, G. Mattersteig, E.W. Wong, Y. Luo, K. Beverly, J. Sampaio, F.M. Raymo, J.F. Stoddart, J.R. Heath, "*A [2]Catenane-Based Solid State Electronically Reconfigurable Switch*", Science, 2000, **289**, 1172 - 1175.
9. J. Pinson, J. Saveant, R. Hitmi, "*Process for Modifying the Surface of Carbon-Containing Materials by Electro-Chemical Reduction of Diazonium Salts, Applicable in Particular to Carbon Fibers For Composite Materials: Carbon-Containing Materials So Modified*", French Patent, PCT/FR92/0087, 1992.

10. P. Allongue, M. Delamar, B. Desbat, O. Fagebaume, R. Hitmi, J. Pinson, J.M. Saveant, "Covalent Modification of Carbon Surfaces by Aryl Radicals Generated from the Electrochemical Reduction of Diazonium Salts", *J. Am. Chem. Soc.*, 1997, **119**, 201-207
11. Y-C. Liu, R.L. McCreery, "Reactions of Organic Monolayers on Carbon Surfaces Observed with Unenhanced Raman Spectroscopy", *J. Am. Chem. Soc.*, 1995, **117**, 11254.
12. S. Ranganathan, R. McCreery, S.M. Majji, M. Madou, "Photoresist-Derived Carbon for Microelectrochemical Applications", *J. Electrochem. Soc.*, **2000**, *147*, 277 – 282.
13. S.N. Yaliraki, M. Kemp, M.A. Ratner, "Conductance of Molecular Wires: Influence of Molecule-Electrode Binding", *J. Am. Chem. Soc.*, **1999**, *121*, 3428-3434.
14. T. Rueckes, K. Kim, E. Joselevich, G.Y. Tseng, C. Cheung, C.M. Lieber, "Carbon Nanotube-based Nonvolatile Random Access Memory of Molecular Computing", *Science*, 2000, **289**, 94-97.
15. J. Chen, M.A. Reed, A.M. Rawlett, J.M. Tour, "Large On-Off Ratios and Negative Differential Resistance in a Molecular Electronic Device", *Science*, 1999, **286**, 1551-1552.
16. C. Kergueris, J.P. Bourgoin, S. Palacin, D. Esteve, C. Urbina, M. Magoga, C. Joachim, "Electron Transport Through a Metal-Molecule-Metal Junction", *Phys. Review B*, 1999, **59(19)**, 12505.
17. W. Tian, S. Datta, S. Hong, R. Reifengerger, J.I. Henderson, C.P. Kubiak, "Conductance Spectra of Molecular Wires", *J. Chem. Physics*, 1998, **109(7)**, 2874-2882.
18. D.F. Padowitz, R.J. Hamers, "Voltage-Dependent STM of Covalently Bound Molecules on Si(100)", *J. Phys. Chem.*, 1998, **102**, 8541-8545.
19. S. Datta, W. Tian, S. Hong, R. Reifengerger, J.I. Henderson, C.P. Kubiak, "Current-Voltage Characteristics of Self-Assembled Monolayers by Scanning Tunneling Microscopy", *Phys. Rev. Lett.*, 1997, **79(13)**, 2530-2533.
20. C.H. de Villeneuve, J. Pinson, M.C. Bernard, P. Allongue, "Electrochemical Formation of Close-packed Phenyl layers on Si (111)", *J. Phys. Chem. B.*, 1997, **101**, 2415-2420.
21. Y-C Liu, R.L. McCreery, "Raman Spectroscopic Determination of the Structure and Orientation of Organic Monolayers Chemisorbed on Carbon Electrode Surfaces", *Anal. Chem.*, 1997, **69**, 2091.

A copy of each document is included for the express purpose of providing the Patent and Trademark Office with ample opportunity to evaluate the same and arrive at an independent assessment of the materiality of each, if any, to the examination of the above-identified application.

In reviewing the enclosed copies of the above documents, the Examiner is instructed to ignore any underscoring or highlighting which may have been done because such markings may or may not have any relationship to the subject matter of the above-identified application. The copies being submitted with this Information Disclosure Statement are the best copies available at this time.


The identification of any document herein is not intended to be, and should not be understood as being, an admission that each such document, in fact, constitutes "prior art" within the meaning of applicable law.

Applicant(s) respectfully requests that the documents cited herein be made of record in the normal manner and that such documents appear on the printed patent as being considered and made of record.

Respectfully submitted,

Date: January 5, 2001

By:

  
\_\_\_\_\_  
Roger A. Gilcrest  
Registration No.: 31,954  
Standley & Gilcrest LLP  
495 Metro Place South, Suite 210  
Dublin, Ohio 43017-5315  
Telephone: (614) 792-5555  
Facsimile: (614) 792-5536